Compost Cooperative Training

What is compost?
Compost is an organic fertilizing soil amendment made from the decomposition of organic matter by a variety of different methods.

Method
The compost cooperative will be using the hot composting method, which by creating the perfect mixture of nitrogen, carbon, water and air, attracts heat producing bacteria to decompose the organic matter and create compost.

4 Components of Compost

1. *Green Material*
- Organic matter high in Nitrogen
- Fuel for the compost

Acceptable Green (High in Nitrogen) Materials
- raw vegetable or fruit scraps
- coffee grounds
- tea bags (remove the staple)
- crushed egg shells
- fresh leaves
- fresh garden waste
- flowers
- hair

Acceptable Green Materials that must be coordinated with Manager due to extremely high levels of Nitrogen.
- Fresh (less than a year old) *organic* manure
- *Organic* fresh grass clippings
- *Alfalfa*

2. *Brown Material*
- Organic matter high in Carbon
- Base of the Compost

Acceptable Brown (High in Carbon) Materials
- Dried leaves
- Woodchips (if possible avoid woods with natural herbicides such as walnut, cypress, cedar, and white oak)
- Sawdust and wood shavings (avoid pressure treated wood and toxic glues)
- Straw (avoid hay which has more seeds)
- Dried plant waste with no diseases
- Wood ash
- Newspaper and any other paper with soy ink

- Dryer Lint (only if using non toxic dryer sheets)
- Seashells (Must boil/bake to sanitize and smash to dust)

Materials to Avoid

Always avoid

- Plants with diseases or pests
- Any plants that have LOTS of seeds
- Meat, fat greases, bones
- Dairy
- Pet waste
- Poison Ivy
- pesticides or herbicides
- Anything toxic or non biodegradable
- Colored paper, glossy paper, sharpie and roller pen ink
- Animal amendments (blood/bone meal, fish fertilizer, etc.)

Use Moderately

- Oils (very moderately!)
- Breads, grains, rice
- citrus and pine needles
- spent grains from brewing
- **Compost bags (rip apart)**

3. *Oxygen*

- Hot compost is an aerobic (oxygen) process.
- Oxygen feeds the bacteria that decompose the organic matter.
- If there is low oxygen (becomes anaerobic) it will attract anaerobic bacteria that produce a rotten egg smell.

4. *Water*

- The bacteria needs the right moisture level to be active.
- Should feel like a rung out sponge.
- Too much water will make the compost anaerobic.

3-Bin System

Bin 1	Bin 2	Bin 3

1. Add food scraps and garden waste in the bin 1. <u>This is the only bin that fresh food scraps and garden waste is ever added.</u>
2. When bin 1 is full, *or its been at least a month*, shovel it into the bin 2.
3. Add to bin 1 again. *Don't add to bin 2.*
4. When bin 1 is full again shovel bin 2 to bin 3 then shovel bin 1 to bin 2.
5. Add to bin 1 again. *Don't add to bin 2 or bin 3.*
6. When Bin 1 is full again sift bin 3 compost into a storage area. Throw anything not composted in the sifter back into bin 1.
7. When bin 3 is empty shovel bin 2 into bin 3 and bin 1 into bin 2.
8. Add to bin 1 again.
9. Repeat

<u>Process</u>

Step 1: <u>Adding fresh food and garden waste</u>

Brown 2:1 Green

- On average use a 2:1 ratio for Browns and Greens
    - 2 handfuls of brown to every 1 handful of green
- *Always make sure the first bottom layer of the bin is a layer of at least 3-4 inches of Browns.*
- Add a 2 inch trim of Browns to the sides of the bends where there is hardware cloth. This will keep rotting food from being exposed on the sides attracting pests.
- Add greens in a flat layer making sure there's no exposed rotting food on the sides.
- Add a flat Brown layer twice as thick on top of the green layer.
- **There should never be any exposed rotting food ever!**
- Repeat this method each time Greens are added.
- Think Lasagna!

Biofilter

- The Browns act as a biofilter, filtering any odors that may attract pests. Always make sure there's a brown layer at least 2 inches, completely surrounding the Greens.

Ensure Drainage

- Try to use woodchips for the bottom layer to prevent clogging drainage points.
- Check that drainage points are being clogged everytime the compost is turned. If it looks clogged or there is anerobic smells coming from the floor, remove the floor stones or boards and clean/wash the bottom.

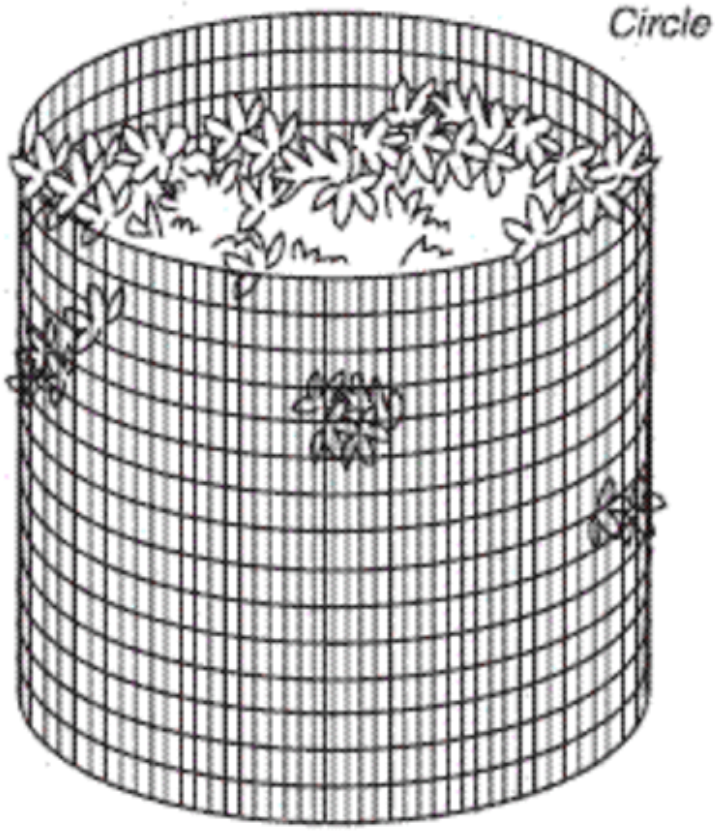
Surface area

- The smaller the pieces the more surface area exposed and the better it will compost and the easier it will be to turn. Cut everything into small pieces.

Brown Storage

- Its important to have a Brown storage bin and to collect Browns throughout the year.
- Anytime the compost cooperative is out of Browns, all drop-offs must be suspended.

Brown Storage (Use Hardware Cloth)

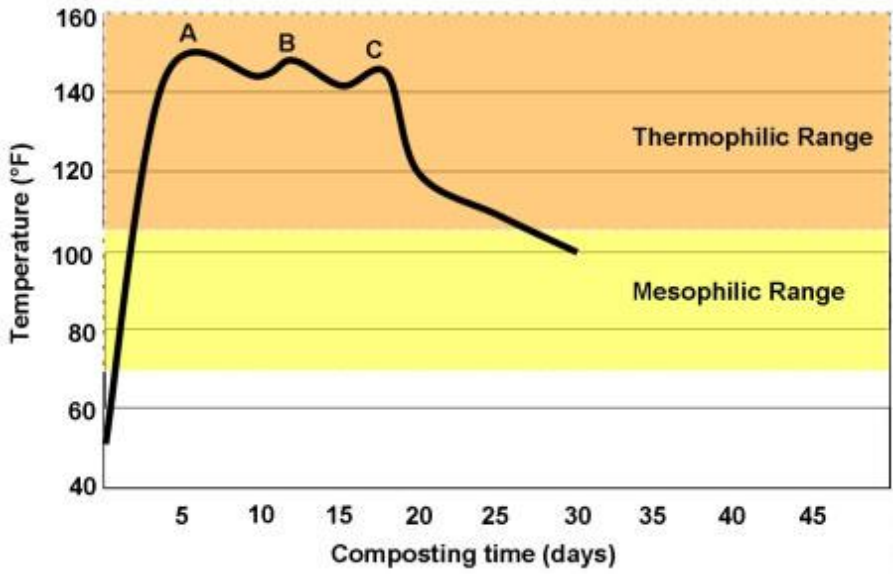

Circle

Step 2: Establish right moisture and air levels.

The complete composting process doesn't really start until you have a full bin of compost that has just been turned, the right moisture and air levels established, and will not receive additional fresh organic matter.

Turning Process

- Once Bin 1 is full, *or its been at least a month*, shovel it into Bin 2.
- Check moisture and air levels while shoveling.
- Add water if too dry and add Browns if too wet during the shoveling.
- Close Bin 2 and do not add additional organic material.

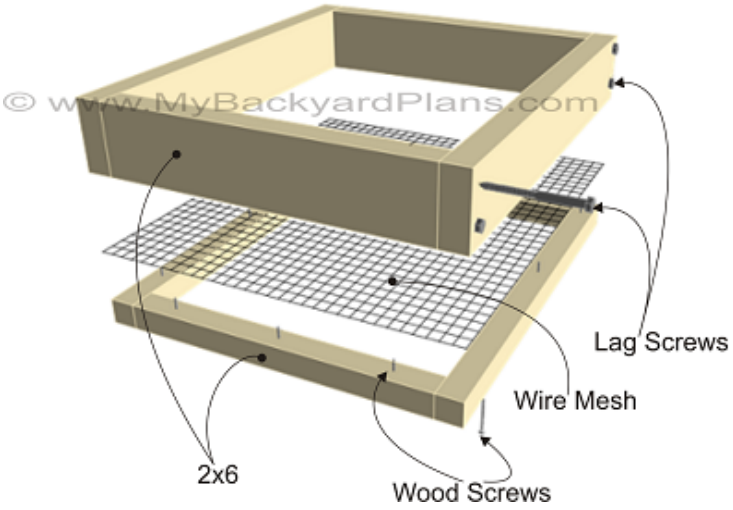


Compost needs to stay between 135-155 for at least 3 days to kill most weed seeds or pathogens.

Step 3: Finishing Compost

- Compost may take 2-3 months to finish
- Once Bin 3 is done and ready to be shovel out it will need to be sifted.
- Sift final compost over a wheelbarrow or a storage bin.
- All uncomposted debris should be put back into Bin 1.
- Finish and Sifted compost should be covered and left to seat for another two weeks before using in a garden.

Sifters



Finished Compost Storage (must be covered)

Compost Best Practices

Solarization

- Solarization can help safely compost plants with seeds or plants with pest or disease problems
- Stick these plants in a black plastic trash bag and place the bag in the sun for at least 30 days.
- After 30 days all seeds, pests, and pathogens should be dead and the plants can be composted.

Leachate Buffer Zone

- Leachate is a liquid runoff of compost that can be hazardous if it reaches a water system.
- To prevent leachate from running off your site plant a non edible garden downhill of the compost bin.
    - If you have any sand amend the soil of this garden to help retain the leachate.
    - Good plants to use would be comfrey, native grass, native perennial flowers.

Storing Compost at Home

- To prevent bad odors store compost at home in:
    - Freezer
    - Charcoal filter containers to store compost at home

Compost Trouble Shooting Guide

- Rotten Egg Odor
    - *Too much moisture:*
        - Dry out, turn pile more, add dry brown material, check drainage
- Ammonia Odor
    - *Too much Green material:*
        - Add Brown Material
- Unwanted Pest
    - *Too much moisture, food scraps are exposed, wrong material in pile:*

        - Dry out, make sure food scraps are covered by brown material, remove any bad foods
- Slow Decomposition/low heat
    - *Lack of moisture, air and/or Nitrogen*
        - Add water, turn pile, add more greens, increase pile size

Equipment

- Pitchfork
    - Turns compost better than shovel

- Compost aerator
    - Can help turn compost without moving to another bin.

- Compost thermometer
    - Thermometer that is long enough to reach the middle of the pile.

- Scale
    - Used to measure food scraps composted and finished compost

Signage

- Compost cooperatives must maintain signage explaining what the compost cooperative is and how to join.
- Informative signage outlining composting BMPs can help ensure the quality of compost.